

*Xantholinus tricolor*, *Lathrobium multipunctum*, *Agathidium marginatum*, and *Adimonia tanacetii* in great abundance, were found in the sand-pits; also a specimen of *Chrysomela distinguenda*. The best find however was a nice series of *Chrysomela marginata*; this rare species, which is a new record for Suffolk, was taken in the different sand-pits and also in rabbit-holes by careful and diligent searching. Fowler gives the British distribution as Southend; Pegwell Bay; Swansea; Barmouth; Northumberland; Cheviots, etc.; Scotland, Edinburgh, Knockleith, Braemar, etc. In the supplement we add—Devil's Dyke, Brighton; and Cleethorpes, Lincs.

At Barton Mills *Hippodamia variegata* was as abundant on small fir trees as it was in 1918, and I examined a great number of specimens, to see if I could add more of the known aberrations to our list. The following forms occurred:—

- (1) Six spots on each elytron and the scutellary spot present; this appears to be the type form.
- (2) One spot on each elytron and scutellary spot = ab. *inhonesta*, Weise.
- (3) Two spots on each elytron and scutellary spot = ab. *quinquemaculata*, F.
- (4) Three spots on each elytron and scutellary spot = ab. *constellata*, Laich.
- (5) Four spots on each elytron and scutellary spot = ab. *carpini*, Fourc.
- (6) Five spots on each elytron and scutellary spot = ab. *neglecta*, Weise.
- (7) Fourth and fifth spots confluent = ab. *ditylotus*, Donisthorpe, *Ent. Rec.* 30 29 (1918).

Of these seven forms nos. (2) and (6) have not been recorded from Britain before, as far as I am aware. It is perhaps as well to mention that I have not looked up the original descriptions; these being the interpretations given by Ganglbauer. It is probable that they will require revision when this has been done.

A nice series of *Anisotoma cinnamomea*, including some very well developed ♂♂, was swept off long grass in rides between fir trees. About three o'clock in the afternoon, the sky clouded over, and a fine drizzle came on, when the first specimen was swept, and the last was taken about five o'clock. Morley only records this fine species from Suffolk on the authority of Curtis.

Other species swept at the same time were—a very fine really jet black example of *Rhizobius litura*, only the tarsi and extreme apex of the elytra being lighter; a dark form of *Micraspis 22-punctata*; *Phalacrus substriatus*; *Olibrus corticalis*; and *Apion rubens*, no *Rumex* being present; etc. *Homalota divisa*, *H. parva*, and *H. laevana* were shaken out of a dead hedge-hog.

Numerous other common species were taken or noted, which it is unnecessary to mention here.

---

### The Rhopalocera of the Bangalore District, India.

By T. H. L. GROSVENOR.

Having been asked by the Editor of the *Entomologist's Record* to give an account of the Lepidoptera met with during the course of my wanderings since August, 1914, I will do my best to comply, but am afraid that these notes will leave a lot to be desired, as army life does not lend itself to Entomology. Of course I know the old saying that

if work interferes with entomology give up the work, and although quite willing to carry out this precept, each battalion has a treasured possession in the person of the Sergeant Major, who prefers a long parade state to a long series.

In many ways I was fortunate, especially in my Colonel, who readily granted many little privileges, which enabled me to obtain species that without his goodwill I should never have taken. In other ways I was unfortunate, as when I had made arrangements to apply for leave to go on long journeys, something always occurred to prevent my going; for instance, in 1917 I was going to Lahoul to try for *Parnassius* and other Palaearctics that occur in great number in that remote region. The Mahsuds started raiding on the Dera Jat frontier, and the Government deciding on punitive measures, my battalion was ordered to Waziristan.

In 1919, thinking everything quiet, I decided to apply for leave to go to Northern Sikkim to see if *Armandia lidderdalii* and ♀ *Teinopalpus imperialis* were to be found, but the Amritsar riots, and Afghan war, called me elsewhere; yet as I am not writing an account of frontier warfare I will return to August, 1914, when I joined the London Cyclists, and in accordance with the scheme of coast defence, we were ordered to the south coast; after a few months here we were moved to the Norfolk coast, when one day orders were issued to hand in our cycles, and we were hurriedly moved to Chisleton Camp *en route* for East Africa, but after being there for several weeks these orders were cancelled, and we were sent to Devonport and shipped on board the H.M.T.S. "Ceramic" for an unknown destination, but the days at sea passed without our landing at any of the theatres of war, and we reached Port Said, where two visitors came on board, *viz.*, a hoopoe and our old friend *Pyrameis cardui*. Finally on February 28th, 1916, we landed at Bombay, and immediately entrained to Bangalore.

To one landing in India for the first time, the journey through the Western Ghâts is very deceptive, as one immediately fancies this very beautiful range of hills to be typical of India, but one soon learns that this is the exception. I did not get an opportunity of collecting in this part of the Peninsula, and judging from the varied and tropical vegetation, it should be a most productive collecting ground. Butterflies were swarming along the railway banks, but beyond a few common species, I could not identify them, which was perhaps as well for my peace of mind. After three days in the train we arrived at Bangalore, but still I had to restrain my enthusiasm, as every regiment arriving in the country has to be in quarantine for a period of 14 days, at the expiration of this time I started entomology whenever I could manage to obtain any spare time. Thursdays were anxiously looked forward to as this day is a holiday for all troops in India, and the following notes show the results obtained.

*Menelaides (Papilio) hector*.—Abundant everywhere, especially in a small sandal wood plantation at the back of the Hebbal rifle ranges, apparently continuously brooded, as from March to December they were always to be found in every possible condition. This was the only *Papilio* I found of which both sexes were commonly taken. For several weeks I despaired of ever being able to take this striking butterfly, but finally I found they could be taken in any number between the hours of 4 to 6 p.m., when they cease flying high and

settle on a small green daisy-like flower; they may then be taken without a net; at the approach of dusk they settle for the night usually in small colonies of 5 or 6, and apparently return to the same tree each evening. I watched one for over a fortnight, having selected it for observation on account of a crippled hindwing, so that there was no chance of mistaking it. One afternoon I saw this insect at the farther side of the plantation at least a mile away, but it came back to its usual tree for the night; on several occasions I found the pupa attached to twigs or small branches of various bushes, but failed to find the larva.

*Menelaides (Papilio) aristolochiae*.—Not nearly so abundant in the Bangalore district as *P. Hector*, but in the Central Provinces it is in great numbers, and there replaces *P. Hector*. Whilst travelling north I saw it in hundreds flying round the trees, preparatory to settling for the night. The larvæ were fairly plentiful round Bangalore feeding on a species of *Aristolochia*, but I only managed to breed a few, the majority being ichneumonated, which perhaps accounts for its being so uncommon in this district.

*Papilio demoleus*.—Very abundant but very fast on the wing and difficult to obtain in good condition, but as the larvæ and pupæ may be found in numbers on orange and allied species of shrubs, and are easily reared in captivity, one need not worry about the imagines. This butterfly is gregarious at night, and when their headquarters are found they will be seen by dozens, usually 3 or 4 sitting on a grass culm. They always frequent the same spot at night and apparently come from long distances to a selected locality, which will only extend for a few yards; outside this area not a single specimen will be seen, until one comes to the next roosting ground perhaps 3 or 4 miles away. I only found four of these spots in the Bangalore district in a radius of about 10 miles, it seems impossible to assign a reason for this excessive local tendency at night, as in the course of a ramble hundreds of similar spots will be noticed. Of course, this nightly gathering is general among the *Papilios*, but in no other species is it carried to such extremes.

*Iliades (Papilio) polymnestor*.—Very scarce; I only managed to take a single ♂, and only saw three others; it flies very high and swiftly.

*Laertias (Papilio) polytes*.—Perhaps the most general and abundant species of the Indian *Papilios*. The male is to be seen everywhere, but the interesting polymorphic female is very difficult to find, as it seldom if ever flies in the open, and has to be searched for in dense bushes, and when found is generally torn to rags. By hard work I was rewarded by three forms in perfect condition.

(1) Resembling the ♂ but considerably larger.

(2) Mimicking *P. Hector*.

(3) Mimicking *P. aristolochiae*.

It is difficult to see what advantage is gained by Mimicry, as the habits of *polytes*,  *Hector* and  *aristolochiae* are entirely different, and one never has the slightest doubt as to which species one sees, although so closely resembling one another in colour and markings. It certainly does not protect *polytes*, as I have on several occasions seen the King Crow (*Dicrurus ater*) not only attack, but eat it. The prevailing form is that resembling  *aristolochiae*.

*Pathysa (Papilio) nomius*.—Very scarce. I only saw a single male which I took at a puddle of dirty water.

*Zetites (Papilio) agamemnon*.—Not very abundant, and difficult to obtain, as it flies very high and when feeding chooses the top blooms of the highest Lantana bushes.

This brings to an end the list of Papilios that I obtained in the Bangalore district, I of course took several other species in different parts of India, but as Kipling says "that is another story."

*Nychitona (Leptosia) xiphia*.—I only saw a single male of this delicate little insect, although I made a careful search in the district where I obtained my only specimen.

*Delias eucharis*. Generally scarce, only 2 or 3 seen in June when it was very wasted.

*Anaphaeis mesentina*.—By far the most abundant butterfly in India. The larvæ are to be found by thousands on a small thorny bush of which I do not know the name. I think my record for numbers was a branch slightly under 18 inches in length with five side shoots each slightly under 6 inches, which had 64 pupæ attached to it. This was in the Punjab, where generally it is more abundant than in the South. In 1918 I collected many thousands of these pupæ and bred a most variable series, the females especially ranging in colour on the under-side of the secondaries from a deep orange to buff and creamy white; but I never had the pleasure of setting this series, as the worst enemy of the entomologist in India attacked the three large cigar boxes in which they were, and in less than a week they had cleared every butterfly out. This enemy is a very small almost transparent ant, which believes in the German method of attack in mass formation with thousands in reserve, and will absolutely ruin a box of insects in a few hours. The method I used finally to keep these pests away was to get a tray of paraffin, stand a tin in the centre of this and then place my box of butterflies on the top. By this method I was able to keep the ants away and to a lesser degree the small beetles that are also very destructive. This species has 3 or 4 broods per annum, but the larvæ are never so abundant as in May. I could not find any trace of seasonal dimorphism, the wet season producing a form that could be readily matched in the dry season.

*Pieris canidia*.—Local and scarce in the Bangalore district, by no means a well marked form and showing little variation.

*Ixias pyrene* and *I. marianne*.—Both common and generally distributed in bushy country; difficult to net owing to their habits of flying through thorny bushes.

*Catopsilia crocale*, *C. pyranthe* and *C. florella*.—All three very abundant and much given to migration. In June, 1916, I noticed a migration which lasted three days and was composed mainly of *C. pyranthe* with smaller numbers of the other *Catopsilia* species. They were all travelling from east to west across an area north and south of not more than  $1\frac{1}{2}$  miles; outside this belt very few were to be seen, during these three days many hundreds of thousands must have passed. So conspicuous, even to non-entomologists was the continuous passing of these butterflies that nearly every man in the camp passed some remark about them. There was a slight breeze blowing from the S.W. so that they were travelling practically against the wind. They did not stop at any blooms or even puddles of dirty



water, which in the ordinary course of events are a certain attraction, and it is a common sight to see dozens of *Catopsilia*, especially *C. crocale*, and I am not exaggerating when I say, scores of *Terias* swarming over a patch of wet mud. At the end of three days this migration ceased, and the *Catopsilias* behaved in a normal fashion, and did not seem to be increased or decreased in numbers. During the migration the hours of flight were from sunrise to sunset, and during these hours the kites and mynahs levied very heavy toll, while after dusk the mongooses carried on the work so that the ground was covered with wings.

*Terias libythea*, *T. hecabe* and *T. savi*.—Were generally abundant, but I will not say anything about these, beyond that I took a long series, for so far they have beaten me in the matter of identification, as they vary to a considerable extent, especially *T. hecabe*, so that one species overlaps the other, and until I get time to examine the genitalia, I should not like to give a definite opinion as to which is which. The other species, *T. laeta*, was rare, but is easily identified by the different shape of the primaries.

*Colotis amata*.—Generally scarce. I only saw about half-a-dozen, and these were restricted to a compound with a piece of rough ground.

*Colotis eucharis*.—This beautiful little insect was abundant on the plains and was very conspicuous on the wing, its favourite localities being barren country with a few thin blades of grass. It is apparently single brooded but is on the wing for a considerable period, *viz.*, from early July to middle of September. During this period they may be found in every possible condition.

*Hobomoia glaucippe* race *australis*.—Generally common flying swiftly round the tops of mango trees, but I was only able to secure a single male.

*Pareronia hippia*.—A single male only seen flying in a small wood.

*Cyaniris puspa*.—A few males only taken in a small wood. Generally, with a few exceptions, I found the *Lycænids* scarce in the Bangalore district. I believe them to be more abundant in the hills round, but as I did not get an opportunity to go more than 10 miles from barracks, I was not able to sample that country, and could only look on the distant hills with envy.

*Zizera maha* and *Z. gaika*.—Both species fairly abundant on the surrounding plains.

*Azanus ubaldus* and *A. wranus*.—Fairly plentiful in the district, although I spent considerable time working the *Lycænids* I could not find any variation, compared with that in the British species.

*Talicauda nysens*.—Scarce. I only saw 3 or 4 males.

*Lampides bochus*.—This beautiful little butterfly, which rivals the *Morphos* in colour if not in size, was very abundant in July flying round acacia bloom, but difficult to obtain in good condition.

*Lampides celeno*.—Abundant on any small flowers.

*Catochrysops strabo* and *C. euejus*.—Both abundant.

*Tarucus theophrastus*?—Very abundant in restricted areas flying round and settling on *Zisiphus jubata*; it was most abundant on the parade ground of Baird Barracks. I am very doubtful as to the identity of this insect, as in northern India I found another butterfly similar in appearance but averaging at least 2 mm. larger in expanse. Also the coloration of the male of the latter is similar to that of the

British *Polyommatus icarus*, and the markings on the underside blackish, whereas the Bangalore males are lilac with underside markings reddish-brown. The females from both north and south are somewhat similar, but the northern race is considerably larger. I have a fairly long series of both, and after labelling I mixed both races indiscriminately and then sorted them without reference to the data, and found I had not the slightest difficulty in differentiating the two races; this I did without hesitation and without a single error. I have not yet examined the genitalia, and if they do not prove to be distinct species, they are at least well marked races, and more worthy of a name than some of the local races, which have acquired them for some reason best known to the person who named them. I have several of both of these races to spare and if any entomologist is interested in the genus *Tarucus* I shall be pleased to hand them over.

*Castalius rosimon*.—Very local and not common. I only found about a dozen in a small sandalwood plantation at the back of Hebal ranges.

*Polyommatus boeticus*.—Abundant everywhere. This was perhaps the most plentiful Lycaenid.

*Curetis thetis*.—Abundant in wooded country. Although most conspicuous on the wing, with the bright copper colour shining in the sun, when settled on a leaf it becomes almost invisible, the reflected glare of the sun on the leaves harmonising with the silvery white underside.

*Iraota maecenas*.—I never saw this insect on the wing; the two males that I have were taken, one larva and one pupa, on a trunk of a very large banyan tree.

*Badamia exclamatoris*.—Very abundant on flowers, especially on acacia blooms. *Hesperiidae* generally were very scarce and I regret to say the few I have taken are not yet identified.

*Danaïda plexippus*.—Generally distributed, but tending to be gregarious; when one came across one others would be certain to be found in the near neighbourhood. It was not found in the open like *D. chrysippus*, but was generally found in woods or bushy country. At night they collected together with *D. limniace*, *Euploea core*, and *E. coreta*, and these four species could be found in hundreds in low branches of trees.

*Danaïda chrysippus*.—Very abundant everywhere from S. India to Afghanistan and Waziristan, and is practically the only butterfly I observed in the latter country. It is apparently continuously brooded, as imagines can be seen from Jan. 1st. to Dec. 31st., also ova, larvæ, and pupæ can always be found together, whenever one takes the trouble to look for them.

*Danaïda limniace*.—Abundant in wooded country and like *chrysippus* apparently continuously brooded.

*Euploea core*.—Abundant in woods all through India.

*Euploea coreta*.—Apparently abundant in the Bangalore district, but unfortunately I did not recognise the fact that I had taken a distinct species until my return to England, but as at least half the *Euploea*s taken in this district are this species, it must be equally common.

*Mycalasis perseus*.—Common in the ricefields.

*Melanitis ismene*.—Abundant in the ricefields, I could not distinguish any difference between the wet and dry season forms, for

one thing it is difficult to take two alike, and the alleged dry season form occurs commonly in the wet season and *vice versa*.

*Charaxes fabius*.—Apparently of rare occurrence, I only observed a single specimen.

*Eulepis athamas*.—Fairly common, but very local, I only found one small district where it could be found, and generally congregated on a single Lantana bush, although this plant was growing everywhere.

*Euthalia garuda*.—Generally common, it was particularly fond of sitting on wet mud at the edge of a tank or stream.

*Athyma perius*.—Not common, I only saw a few odd specimens at Hebal.

*Cyrestis thyodamus*.—A single specimen seen.

*Junonia iphita*, *J. lemonias*, *J. orithya*, *J. hierta*, and *J. almana*.—All common and generally distributed; very fond of sunning themselves on hot stones.

*Pyrameis cardui*.—Odd examples everywhere.

*Hypolimnas bolina*.—Very abundant especially in September.

*Hypolimnas misippus*.—Abundant. The female, although closely resembling *chrysippus*, cannot be mistaken on the wing, owing to the latter flying in the open, *misippus* female never leaves the vicinity of bushes and is given to flying through them. The female is not often seen although the male can be seen in hundreds.

*Atella phalantha*.—Very abundant everywhere from June to September.

*Teuchinia violae*.—Very abundant in moist woods. I was fortunate in taking a rather nice aberration of this species, the spots of which are joined together forming a black discal blotch.

This, I think, completes the list of butterflies taken in Bangalore, a total of 60 species, I do not pretend that this by any means exhausts the resources of the district, as my time was limited and facilities for visiting some of the more promising districts were wanting. I feel confident that if some of the hilly and jungle districts were visited this list would seem a very meagre one.

---



---

## SCIENTIFIC NOTES AND OBSERVATIONS.

LIFE HISTORY OF *GASTROIDEA VIRIDULA*, DE. G.—1920. *May 29th*.—Walked to Challacombe (1570 feet above sea level) about 6 miles south of Lynton (N. Devon). Hundreds of *G. viridula* ♂ and ♀ on leaves of *Rumex obtusifolius* (Common Dock) and on underside of leaves thousands of eggs.

EGGS.—Are 1mm. long × .5mm. wide, bright yellow in colour and very conspicuous. Laid in irregular clusters in two or three places on underside of leaf: sometimes as few as 15 and as many as 60 in a bunch.

*May 31st*.—Small dark spot appeared at one end of the egg.

*June 1st*.—Dark spots appeared all over and hairs appeared to be growing through shell of egg.

*June 2nd*.—Larva emerged: ate portion of egg-shell.

LARVÆ.—*June 2nd*, 1st day.—Larvæ are grey with black heads.

*June 3rd*, 2nd day.—Larvæ are black all over, with 6 4-jointed legs and 2 knobs for antennæ. Commenced to feed at night, biting a round hole on underside of leaf.